

they must play in this respect by their enormous quantity on the coasts of Greenland have been described by Captain Holböll in several contributions to Kröyer's treatises. In one place he says, "By letting down a basket containing a dead raven and a piece of the head of a shark to a depth of 75 fathoms, I have, in the course of two hours, got more than six pints of these small animals, although the basket was open and left a broad stream of animals, like a swarm of bees, that escaped during the hauling-up of the basket" (Naturh. Tidsskr. iv. p. 143). In another place the following occurs:—"The larger species of this genus (*Anonyx*) are so voracious that they do not cease eating, even if the food is taken out of the water. If several are confined together in a vessel they soon eat one another" (*ibid.* 2 ser. ii. p. 55).

[To be continued].

BIBLIOGRAPHICAL NOTICE.

Monograph of the Asiatic Chiroptera, and Catalogue of the Species of Bats in the Collection of the Indian Museum, Calcutta. By G. E. DOBSON, M.A., M.B., F.L.S., &c. 8vo. London: 1876.

A FEW months ago we published in this journal a sketch of a new classification of Bats by the author of this work, a classification which, without departing very widely from the groupings of previous authors, certainly seems to bring the whole arrangement of these animals into a particularly intelligible form. As a reprint of the article above referred to constitutes the general introduction to the 'Monograph of Asiatic Chiroptera,' it need not be specially noticed here.

The chief characteristic of the new classification consists in the recognition, in accordance, apparently, with the doctrine of evolution, of a sort of parallelism in the families of the insectivorous Bats (*Microchiroptera* of Dobson)—the simple-nosed Vespertilionidæ and Emballonuridæ (better, perhaps, Noctilionidæ) leading respectively from supposed unknown ancestral forms to the Nycteridæ (*Megadermata*) and Rhinolophidæ on the one hand, and to the Phyllostomidæ on the other, the Pteropidæ being regarded (and, we think, with reason) as representing a distinct type or line of development. It is particularly interesting to find that the discrimination of these two alliances (or lines of descent) is confirmed by so minute a character as the microscopic structure of the hair—the members of the "Vespertilionine alliance" (Vespertilionidæ, Nycteridæ, and Rhinolophidæ) having the superficial scales of the hairs imbricated, while those of the "Emballonurine alliance" (Emballonuridæ and Phyllostomidæ) have them whorled and generally acute and projecting; but we cannot understand how Mr. Dobson can regard the hair of the

Pteropidæ as indicating a connexion with the Vespertilionine alliance, seeing that its structure appears to be an extreme modification of the whorled arrangement of the scales. The amount of shifting of genera caused by the adoption of the new principles of arrangement is very small, the most important change being the transfer of the subfamily Mormopes, Peters, to the Phyllostomide.

It is as a contribution to what we hope one day to see him complete, namely a "Species Chiropteorum," that Mr. Dobson's present work will be welcome to zoologists. Taking the Asiatic region to include the whole of that continent with its islands as far east as Mr. Wallace's boundary-line between the oriental and Australian regions, Mr. Dobson's descriptions, as he himself indicates, include, besides the Asiatic Bats, nearly all those of Europe; indeed, although the province as marked out does not possess four species of European Bats, he has added descriptions of these in footnotes, with the object of making his work a complete treatise on the European and Asiatic Chiroptera. We should have been glad, and we think he would have greatly increased the value of his work without a corresponding augmentation of his labour, had he included in it the Chiroptera of the whole Eastern archipelago; for the line taken as his eastern boundary, however good with respect to strictly terrestrial animals, does not seem to hold in the case of such creatures as the Bats, in connexion with which the term "Eastern archipelago" is still geographically admissible, and Mr. Wallace's line, however true in general, becomes an arbitrary boundary. In many places throughout the work a little more detail with respect to the geographical distribution of the species beyond the limits covered by the author, and in the synonymy of the species (without attempting to rival the elaborateness of Fitzinger's wonderful compilations), and especially in the way of references to figures, would be of advantage to the student. We may notice also the omission of the table of genera of the family Emballonuridæ.

The illustrations consist chiefly of woodcut figures of the heads and ears of the species in certain difficult groups; and they will be found especially valuable in the case of the Leaf-nosed Bats, the structure of the nasal appendages in which it is often almost impossible to describe intelligibly. A few skulls and teeth are also figured.

The Catalogue of the Chiroptera in the Indian Museum at Calcutta is really a systematic list of the Asiatic species of the order, with the addition of those species from beyond the limits of Asia, as laid down in the present work, of which specimens exist in that collection. It gives in parallel columns the number of specimens of each species, their origin and condition, with remarks upon any peculiarities displayed by the individual specimens.

Mr. Dobson's excellent little book, which is published by order of the Trustees of the Indian Museum, may, we believe, be obtained from Messrs. Trübner & Co.